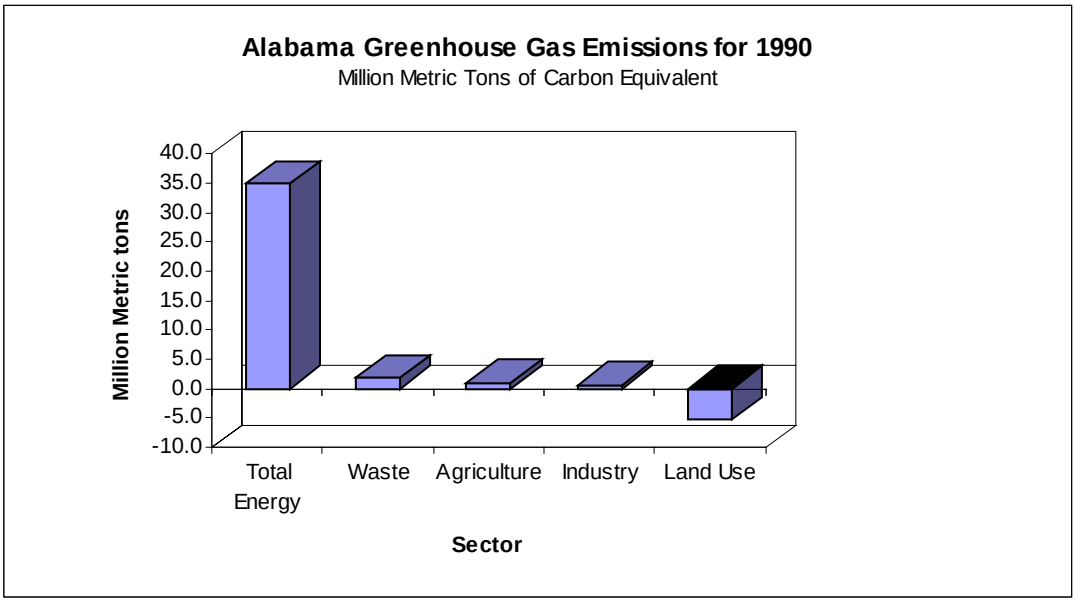
ALABAMA GREENHOUSE GAS EMISSIONS AND SINKS INVENTORY: SUMMARY



This report provides a detailed inventory of greenhouse gas emissions and sinks for Alabama in 1990. Emissions were estimated using methods from EPA's 1992 guidance document ***State Workbook: Methodologies for Estimating Greenhouse Gas Emissions***. In 1990, Alabama emitted 33.3 million metric tons of carbon equivalent (MMTCE). In addition, Alabama estimated emissions of 1.4 MMTCE from biomass fuels and from sources not covered in the workbook methodology.[1,2] Emissions from these sources are not included in the reported total or the table below.

The principal greenhouse gas was carbon dioxide, comprising 92.3 million metric tons. Other emissions included methane, with 1.4 million metric tons (7.9 MMTCE) and 0.002 million metric tons of nitrous oxide (0.2 MMTCE).

The major source of carbon dioxide emissions was fossil fuel combustion (99%), the majority of which is due to utility coal and transportation petroleum. Minor emissions came from lime manufacture and limestone use. Carbon dioxide sinks (non-fuel usage, timber stock, and other forest resources) offset about 18% of the total carbon dioxide emissions. Sources of methane emissions were coal mining (63%), landfills (24%), domesticated animals (7%), natural gas/oil extraction (3%), and manure management (3%). Nitrous oxide emissions were attributable to fertilizer use.

---

[1] These emissions include methane and nitrous oxide from stationary combustion, highway vehicles, and non-highway mobile sources.

[2] Alabama's inventory also estimates emissions of VOCs, NO_x, and CO. As no global warming potentials (GWPs) have currently been estimated for these gases, the total greenhouse gas emissions for Alabama (and other states) are underestimated for the sources that emit these pollutants.

Alabama Greenhouse Gas Emissions for 1990

BY SECTOR	CO_2 (MMTCE)	Methane (MMTCE)	Nitrous Oxide (MMTCE)	PFCs (MMTCE)	Total GHG Emissions (MMTCE)
Energy - Residential	0.9	*	*	*	0.9
Energy - Commercial	0.7	*	*	*	0.7
Energy - Industrial	8.2	*	*	*	8.2
Energy - Transport	7.8	*	*	*	7.8
Energy - Utility	13.5	*	*	*	13.5
Energy - Non-fuel Usage	-1.2	*	*	*	-1.2
Total Energy	**29.8**	**5.2**	*	*	**35.1**
Waste	*	**1.9**	*	*	**1.9**
Agriculture	*	**0.8**	**0.2**	*	**1.0**
Industry	**0.7**	*	*	*	**0.7**
Land Use	**-5.4**	*	*	*	**-5.4**
TOTAL	**25.2**	**7.9**	**0.2**	*	**33.3**

All emissions are reported in million metric tons of carbon equivalent (MMTCE).

An asterisk (*) indicates that emissions of the gas from this sector were zero, insignificant, or not reported.

Emissions due to coal mining and extraction of natural gas and oil are included in the total energy figures, and emissions from biofuel combustion are excluded.

Alabama's high per-capita GHG emissions are largely due to the state's significant level of coal production, and its reliance on coal for energy. Alabama mines a substantial amount of coal (it ranks 12th in the nation for coal production), and its coal deposits have the highest methane content in the country. Thus coal production in Alabama results in substantial methane emissions. Coal also represents 40 percent of the state's energy supply, compared to 23 percent for the US as a whole. Because more carbon is emitted per unit of energy from coal than from any other fuel, Alabama's reliance on coal results in higher GHG emissions per unit of energy than for the US as a whole.

Alabama's emissions in 1990 were 8.24 MTCE per capita, compared to 1990 U.S. emissions of 6.4 MTCE per capita. Alabama's per capita emissions are high due to the large volume of coal related activities in the state.